STREET TREE INVENTORY
WEST LAFAYETTE, INDIANA

Prepared by Department of Forestry and Natural Resources
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INTRODUCTION

Trees are one of the more important parts of the community's infrastructure that contributes materially to the quality of life. Trees also represent a fiscal resource to the community. A street tree inventory provides a snapshot in time of the structure of the community's urban canopy. It is a useful tool for planning and budgeting, for the development of maintenance schedules, for identifying locations for new trees, and for identifying risk potential of the trees the community maintains. This inventory provides data on the number of trees, individual species composition, relative condition of the urban forest, and potential problems or situations of the street trees.

The Department of Forestry and Natural Resources conducted an inventory of street trees for the city of West Lafayette, Indiana. Departmental staff and students, trained in techniques to be used in this survey, conducted the initial inventory between May, 2004 and September, 2005. All trees are located within the city's rights-of-way (ROW), the area between the sidewalk and the street, were included in this inventory. Trees were defined as a plant that would be at least 20-25 feet tall at maturity and typically with an upright single stem form. The data was collected using hand held PCs and subsequently downloaded into an MS Access database. Individual trees or potential planting spaces were identified as belonging to the physical property in which the tree or space resides as opposed to the street to which they are alongside. For example, a 33 inch diameter Siberian elm located along 11th Street but the house number is 1101 Tulip Street. It would be found in the database at 1101 Tulip Street.

A few terms used in the inventory should be identified. Included bark and co-dominant stems can occur without the other but most often they are a joined situation. A tree with two stems (co-dominant stems) (Figure 1) acting as leaders in a tree create included bark. This occurs as the angle between the co-dominant stems narrows. As the tree grows, the bark between the two stems begins to roll onto itself and the wood below doesn't connect and form structurally strong annual rings. Trees with co-dominant stems and included bark are prone to failure for as the weight of the individual stems grow, the lack of holding power between the two stems is reduced and eventually one falls away.

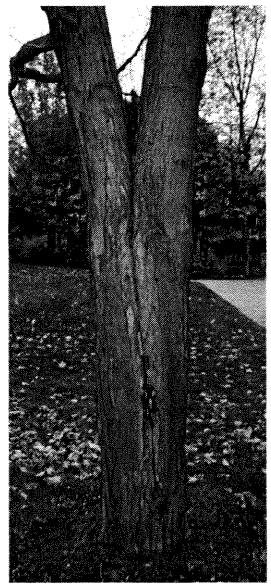


Figure 1. Co-dominant stems and included bark

Data included: house number, street name, tree species, tree diameter at breast height (DBH), number of stems at DBH, tree condition (Table 1), situation issues (Table 2), health issues (Table 3), sidewalk presence or absence, width of lawn between the sidewalk and street, utilities present (Table 4), number of potential new trees, and additional comments or notes. Tree conditions were rated using the International Society of Arboriculture Condition Rating Guide (Table 1). Up to four situation or health issues were recorded for each tree. Work needed and priority was also indicated.

This street tree inventory database was developed by the Department of Forestry and Natural Resources using Microsoft® Access 2000©. It was designed to allow the user to access and print reports, update individual tree records, and add new records as trees are planted. Specific reports were designed to provide an overview of the data as well as details of various issues. A partial listing of reports includes summaries of species, conditions, diameter class distribution, recorded situations or problems, new tree locations, and detailed printouts suitable for site visits of desired locations and conditions. For a complete listing and description of the prepared reports see the database documentation in Appendix I. Users familiar with Microsoft® Access 2000© can create additional queries as desired to examine the data in more specific detail.

Table 1. Tree condition as determined by rating deadwood, foliage and trunk condition. Ratings of excellent, good, fair, poor and dead are in accordance with ISA standards. N/A (blank) refers to potential locations for new trees.

Condition	Deadwood	Foliage	Trunk
Excellent	None to 5% of small branches	Normal for species in size and color	Sound and solid
Good	Dieback limited to less than 20% of smaller branches	Slightly reduced size: showing minor deficiency symptoms	Less than 20% of trunk circumference with dead bark
Fair	Dieback includes 20-40% of smaller branches and 1 or 2 large branches dead	Reduced in size showing major deficiency symptoms	20-50% of trunk circumference dead; fruiting bodies may be present
Poor	Dieback includes more than 40% of small braches, 3 or more major dead branches	Greatly reduced in size, or sparse and chlorotic	More than 50% of circumference of trunk dead decayed and hollow
Dead	Dead	Dead	Dead
N/A (blank)	N/A	N/A	N/A

Table 2. Situation Issues

None
Broken Branch Hanging
Co-dominant Stems
Deadwood (major)
Deadwood (general)
Empty Lot
Encroachment (major)
Encroachment (general)
Limited Root Space
Borderline /Property Line Tree
Curb Damage
Sidewalk Damage
Utility Conflict

Table 3. Health issues

None
Buried Root Crown
Canker
Cavity
Chlorotic Foliage
Damage to Trunk
Damage to Roots
Girdling Root
Included Bark
Insect/Disease
Evidence of Topping
Poor Soil
Mushroom/Fungus

Table 4. Utilities present

1. Overhead
2. Underground
3. Both
4. None

RESULTS

Species and Families

The West Lafayette street tree inventory identified 4104 trees and 92 species (Table 5) along the city rights of way. Ten of the 92 species comprised 80% of West Lafayette's street tree population (Figure 2). Green/white ash (*Fraxinus spp.*) 902 (22%) (Combined for this report because it is difficult to tell green and white ash apart); red maple (*Acer rubrum*) 601 (15%); sugar maple (*A. saccharum*) 351 (9%); American basswood (*Tilia americana*) 331 (8%); silver maple (*Acer saccharinum*) 286 (7%); flowering pear (*Pyrus calleryana*) 199 (5%); Norway maple (*Acer platanoides*) 180 (4%); sweetgum (*Liquidambar styraciflua*) 179 (4%); and honeylocust (*Gleditsia triacanthos)* 170 (4%); ginkgo (Ginkgo biloba) 92 (2%).

Figure 3 shows the major family groups (Genus): maple 35%; ash 22%; rose 8%, oak 4%; elm 3%; conifer 1%, hickory 1%. Table 6 shows the species within the families.

Table 5. Species, number, and percentage of trees in West Lafayette inventory, 2005.

Species	Number	%	Species	Number	%	Species	Number	%
white/green ash	902	22%	white oak	8	0%	American beech	2	0%
red maple	601	15%	amur honeysuckle	7	0%	black cherry	2	0%
sugar maple	351	9%	eastern redcedar	6	0%	shingle oak	2	0%
American basswood	331	8%	unknown	6	0%	pignut hickory	2	0%
silver maple	286	7%	red pine	6	0%	bald cypress	2	0%
flowering pear	199	5%	American elm	6	0%	yew	2	0%
Norway maple	180	4%	white spruce	5	0%	purple leaf plum	2	0%
sweetgum	179	4%	eastern white pine	5	0%	amur maple	2	0%
honeylocust	170	4%	Norway spruce	5	0%	flowering dogwood	2	0%
ginkgo	92	2%	mulberry	5	0%	American hazel	2	0%
Siberian elm	89	2%	Scotch pine	4	0%	apricot	1	0%
tuliptree	81	2%	ornamental cherry	4	0%	white mulberry	1	0%
northern red oak	74	2%	black locust	4	0%	persimmon	1	0%
crabapple	70	2%	apple - edible	4	0%	American mountain ash	1	0%
eastern redbud	48	1%	red mulberry	4	0%	bitternut hickory	1	0%
hackberry	33	1%	northern white-cedar	4	0%	white fir	1	0%
pin oak	31	1%	swamp white oak	4	0%	Ohio buckeye	1	0%
chinkapin oak	25	1%	eastern hemlock	4	0%	downy serviceberry	1	0%
bur oak	23	1%	cucumber tree	3	0%	eastern burning bush	1	0%
Norway maple - CK	23	1%	black oak	3	0%	eastern cottonwood	1	0%
black walnut	22	1%	shagbark hickory	3	0%	hardy rubber tree	1	0%
hawthorn	21	1%	black spruce	3	0%	elm	1	0%
American sycamore	20	0%	willow	3	0%	flowering cherry	1	0%
flowering plum	18	0%	yellowwood	3	0%	goldenrain tree	1	0%
cherry	17	0%	paperbark maple	3	0%	gray dogwood	1	0%
river birch	15	0%	magnolia	3	0%	ailanthus	1	0%
slippery elm	15	0%	bladdernut	2	0%	mockernut hickory	1	0%
northern catalpa	10	0%	paper birch	2	0%	ironwood	1	0%
blue spruce	8	0%	boxelder	2	0%	Kentucky coffeetree	1	0%
black maple	8	0%	osage-orange	2	0%			

Figure 2. Top ten species in West Lafayette inventory comprise 80% of the street tree population.

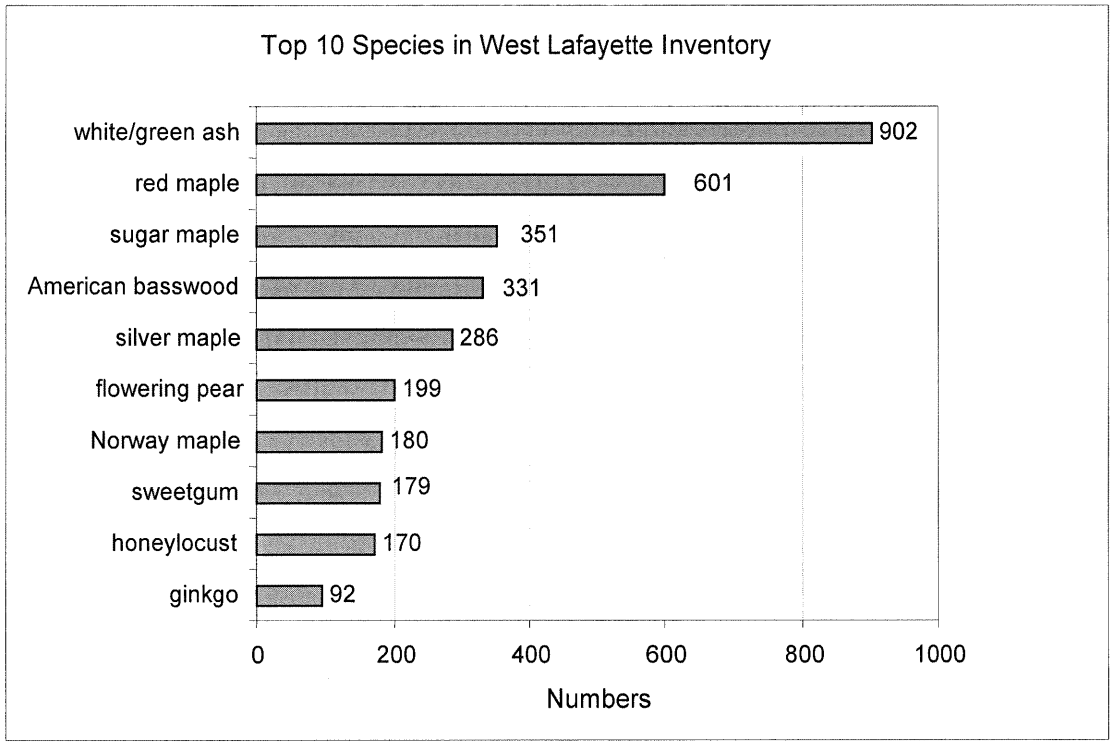


Figure 3. Tree family percentages in West Lafayette inventory, 2005.

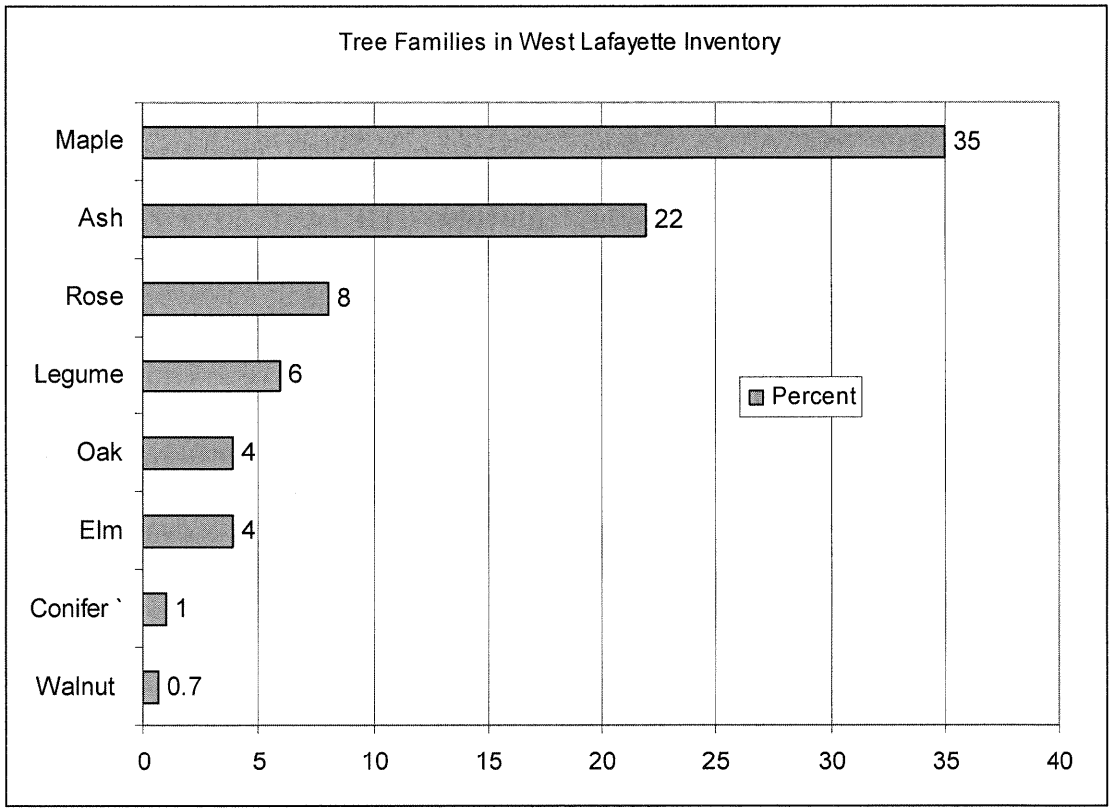


Table 6. Composition of tree families in West Lafayette inventory, 2005.

Maple	**Aceraceae**	**1456**	**35.3%**
red maple	*Acer rubrum*	601	14.6%
sugar maple	*Acer saccharum*	351	8.5%
silver maple	*Acer saccharinum*	286	6.9%
Norway maple	*Acer platanoides*	180	4.4%
Norway maple - CK	*Acer platanoides x 'Crimson King'*	23	0.6%
black maple	*Acer nigrum*	8	0.2%
paperbark maple	*Acer griseum*	3	0.1%
boxelder	*Acer negundo*	2	0.0%
amur maple	*Acer ginnala*	2	0.0%

Ash	**Oleaceae**	**902**	**21.9%**
white ash	*Fraxinus americana*	535	13.0%
green ash	*Fraxinus pennsylvanica*	367	8.9%

Rose	**Roseaceae**	**341**	**8.3%**
flowering pear	*Pyrus calleryana*	199	4.8%
crabapple	*Malus spp.*	70	1.7%
hawthorn	*Crataegus spp.*	21	0.5%
flowering plum	*Prunus spp.*	18	0.4%
cherry	*Prunus spp.*	17	0.4%
ornamental cherry	*Prunus serrulata*	4	0.1%
apple - edible	*Malus spp.*	4	0.1%
black cherry	*Prunus serotina*	2	0.0%
purple leaf plum	*Prunus spp. x cistena*	2	0.0%
apricot	*Prunus armeniaca*	1	0.0%
American mountain ash	*Sorbus americana*	1	0.0%
downy serviceberry	*Amelanchier arborea*	1	0.0%
flowering cherry	*Prunus spp.*	1	0.0%

Legume	**Fabaceae**	**226**	**5.5%**
honeylocust	*Gleditsia triacanthos*	170	4.1%
eastern redbud	*Cercis canadensis*	48	1.2%
black locust	*Robinia pseudoacacia*	4	0.1%
yellowwood	*Cladastris kentukea*	3	0.1%
Kentucky coffeetree	*Gymnocladus dioicus*	1	0.0%

Oak	**Fagaceae**	**172**	**4.2%**
northern red oak	*Quercus rubra*	74	1.8%
pin oak	*Quercus palustris*	31	0.8%
chinkapin oak	*Quercus muehlenbergii*	25	0.6%
bur oak	*Quercus macrocarpa*	23	0.6%
white oak	*Quercus alba*	8	0.2%
swamp white oak	*Quercus bicolor*	4	0.1%
black oak	*Quercus velutina*	3	0.1%
American beech	*Fagus grandifolia*	2	0.0%
shingle oak	*Quercus imbricaria*	2	0.0%

Elm	**Ulmaceae**	**144**	**3.5%**
Siberian elm	*Ulmus pumila*	89	2.1%
hackberry	*Celtis occidentalis*	33	0.8%
slippery elm	*Ulmus rubra*	15	0.4%
American elm	*Ulmus americana*	6	0.1%
elm	*Ulmus spp.*	1	0.0%

Conifer	**Pinaceae, Taxaceae**	**43**	**1.0%**
blue spruce	*Picea pungens*	8	0.2%
red pine	*Pinus resinosa*	6	0.1%
white spruce	*Picea glauca*	5	0.1%
eastern white pine	*Pinus strobus*	5	0.1%
Norway spruce	*Picea abies*	5	0.1%
Scotch pine	*Pinus sylvestris*	4	0.1%
eastern hemlock	*Tsuga canadensis*	4	0.1%
black spruce	*Picea mariana*	3	0.1%
white fir	*Abies concolor*	1	0.0%
yew	*Taxus spp.*	2	0.0%

Walnut	**Juglandaceae**	**29**	**0.7%**
black walnut	*Juglans nigra*	22	0.5%
shagbark hickory	*Carya ovata*	3	0.1%
pignut hickory	*Carya glabra*	2	0.0%
bitternut hickory	*Carya cordiformes*	1	0.0%
mockernut hickory	*Carya tomentosa*	1	0.0%

Diameter Class of Single and Multi-stem Trees

A tree is considered single-stemmed if it has one stem at 4.5' DBH (diameter at breast height). In West Lafayette, there are 4120 trees of which there are 3791 single-stemmed trees. The remaining 330 trees have more than one stem at 4.5' (Table 7). Multiple stems may occur with small tree species in which this is the natural form. Trees such as crabapple, flowering pear, flowering dogwood, eastern redbud, cherry, mimosa, peach, and plum are often multi-stemmed. Large or potentially large stature mature trees with more than one stem have the potential for included bark and co-dominant stems. Both of these situations harbor tree risks through splitting at the point where the multiple stems develop. Maples, ash, catalpa, elm, ailanthus, boxelder, osage-orange, black walnut, black locust, honeylocust, hackberry, white pine, and eastern red cedar are large stature trees that should be monitored when they have multiple stems.

Table 7 shows the numbers, percentages and DBH of single and multi-stemmed trees in West Lafayette. The single stemmed trees ranged from <1 to 50 inch DBH and multi-stemmed trees ranged from <1 to 65 inch DBH. The DBH for multi-stem trees is calculated by taking the DBH of all the stems. Figures 4 (single stem) and 5 (multi-stem) illustrate the numbers of trees graphically. More than 74% of the single stem trees and 63% of the multi-stemmed trees are between 1 to 10 inches DBH. Species by diameter class is contained in Appendix II Report C002.

Table 7. Numbers and percentages of single stem and multi-stem trees by DBH class. Numbers have been rounded off for presentation purposes.

DBH Class	Single Stem	Percent		DBH Class	Multi-stem	Percent		Total	Percent
0-5"	1735	46.0%		0-5"	127	38.5%		1862	45.0%
6-10"	1071	28.0%		6-10"	82	25.0%		1153	28.0%
11-15"	359	9.5%		11-15"	56	17.0%		415	10.0%
16-20"	248	6.5%		16-20"	29	9.0%		277	7.0%
21-25"	169	4.5%		21-25"	13	4.0%		182	4.0%
26-30"	131	3.5%		26-30"	9	3.0%		140	3.5%
31-35"	41	1.0%		31-35"	4	1.2%		45	1.0%
36-40"	29	0.8%		36-40"	5	1.5%		34	0.8%
41-45"	6	0.2%		41-45"	0	0.0%		6	0.15%
46-50"	2	0.05%		46-50"	2	0.6%		4	0.10%
51-55"	0	0.00%		51-55"	1	0.3%		1	0.02%
56-60"	0	0.00%		56-60"	1	0.3%		1	0.02%
61-65"	0	0.00%		61-65"	1	0.3%		1	0.02%
	3791				330			4120	

Figure 4. Numbers of single stem trees by DBH class in West Lafayette inventory, 2005.

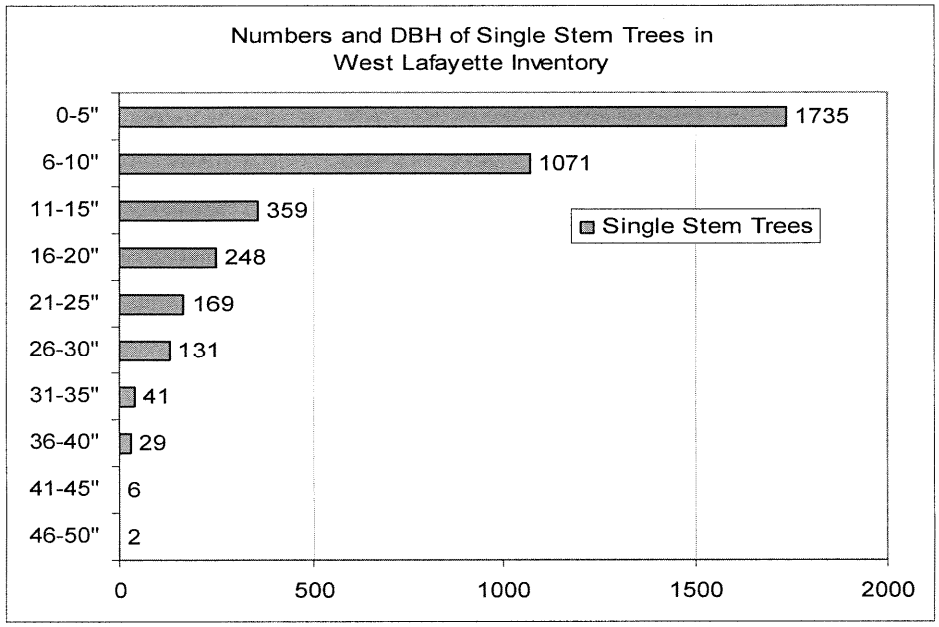


Figure 5. Numbers of multi-stem trees by DBH class in West Lafayette inventory, 2005.

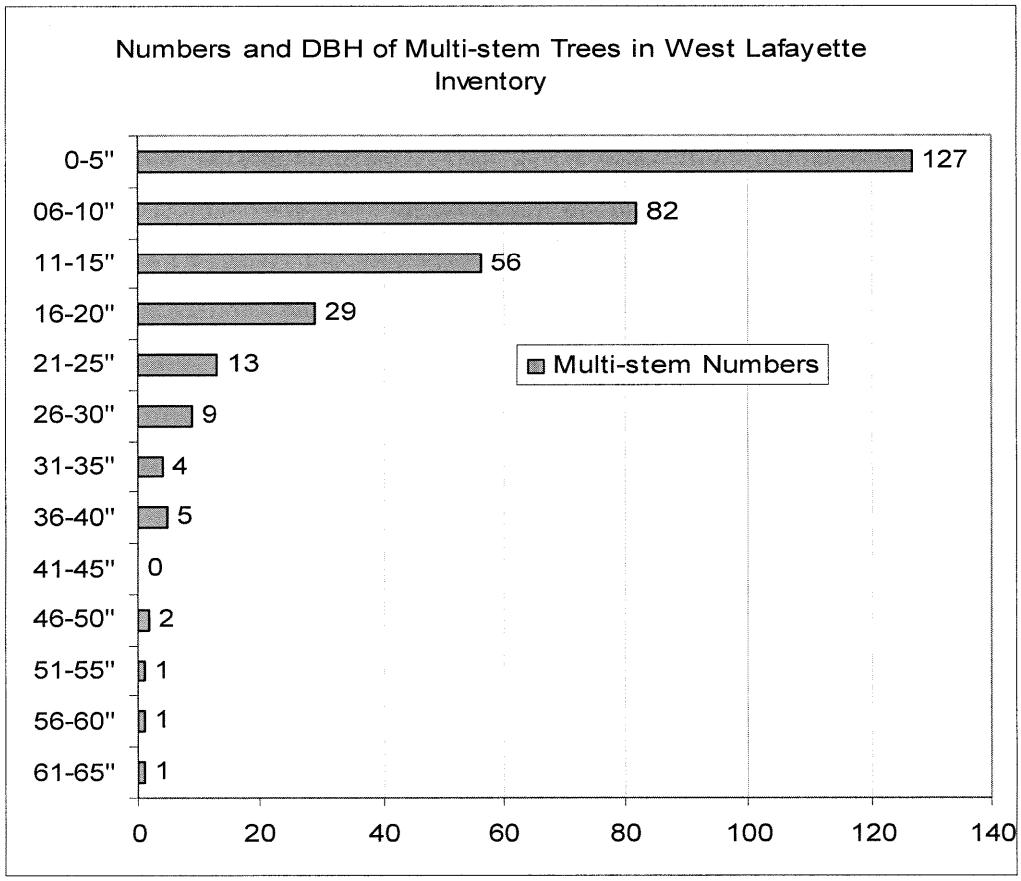


Figure 6 shows 78 trees and 15 species have DBH greater than 30". Table 8 shows that nearly 50% (40) are in fair and poor condition.

Figure 6. Species with DBH greater than 30" in West Lafayette inventory, 2005.

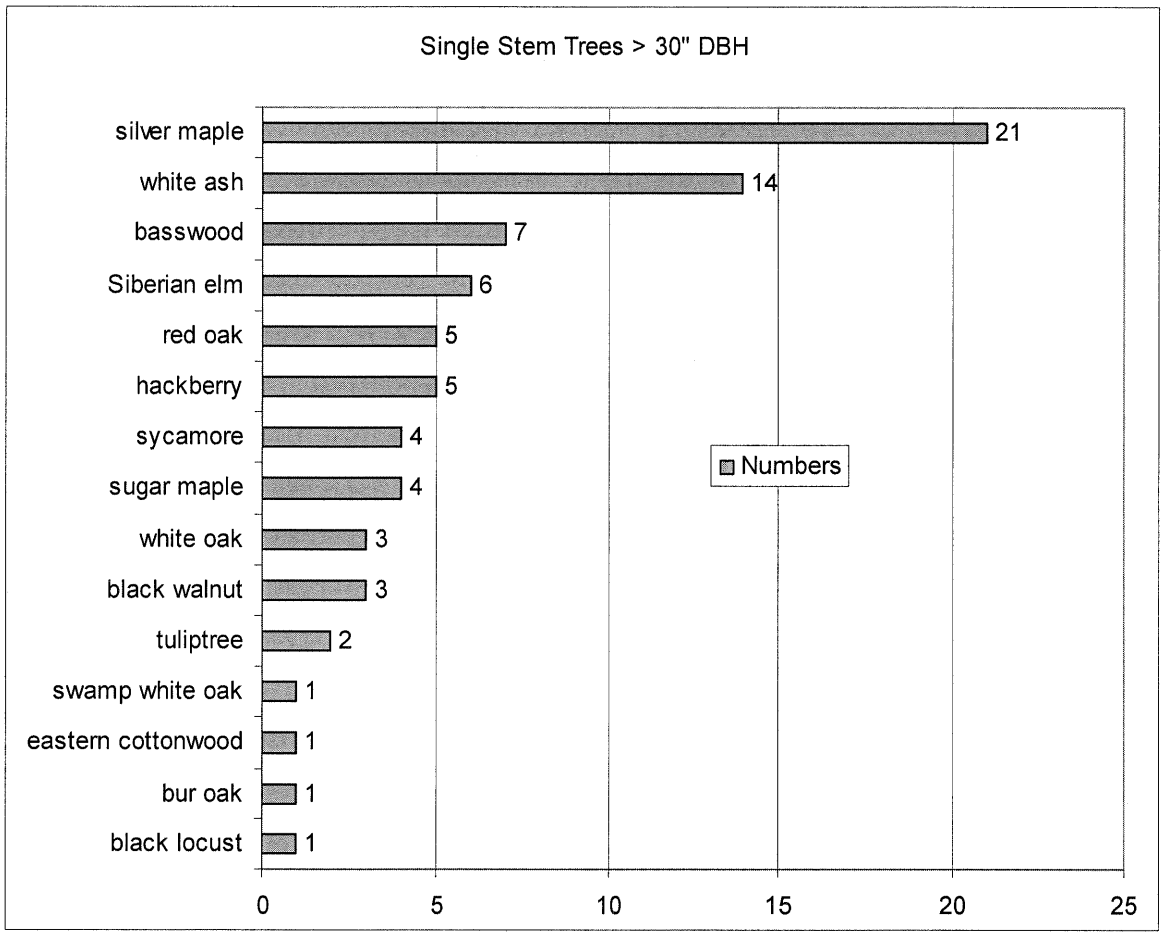


Table 8. Numbers of fair and poor condition trees > 30" DBH in West Lafayette inventory, 2005.

DBH	Condition	Species	No.
36-40"	Fair	American basswood	1
36-40"	Fair	American sycamore	1
36-40"	Fair	black locust	1
31-35"	Fair	black walnut	1
31-35"	Fair	eastern cottonwood	1
31-35"	Fair	eastern redbud	1
36-40"	Fair	hackberry	3
46-50"	Fair	honeylocust	1
31-35"	Fair	northern red oak	1
36-40"	Fair	Ohio buckeye	1
51-55"	Fair	red mulberry	1
31-35"	Fair	Siberian elm	1
31-35"	Fair	Siberian elm	4
36-40"	Fair	Siberian elm	1
41-45"	Fair	Siberian elm	1
31-35"	Fair	silver maple	4
36-40"	Fair	silver maple	5
41-45"	Fair	silver maple	2
31-35"	Fair	white ash	6
36-40"	Fair	white ash	2
31-35"	Fair	white oak	1
36-40"	Poor	American basswood	1
36-40"	Poor	silver maple	1
31-35"	Poor	sugar maple	1

Condition Ratings

Trees were classified into 5 condition ratings (Figure 7), excellent - 1470 (36%), good - 1891 (46%), fair - 638 (15%), poor - 104 (3%), dead - 15 (0%). Figures 8-11 show the numbers of excellent, good, fair and poor trees by DBH class. While Figures 8 and 9 (excellent and good) indicate that the best condition trees are in the 0-10" DBH class the fair and poor ratings (Figures 10 and 11) are highest in the 0-5" DBH class.

Figure 7. Condition rating and percentages of street trees in West Lafayette inventory, 2005.

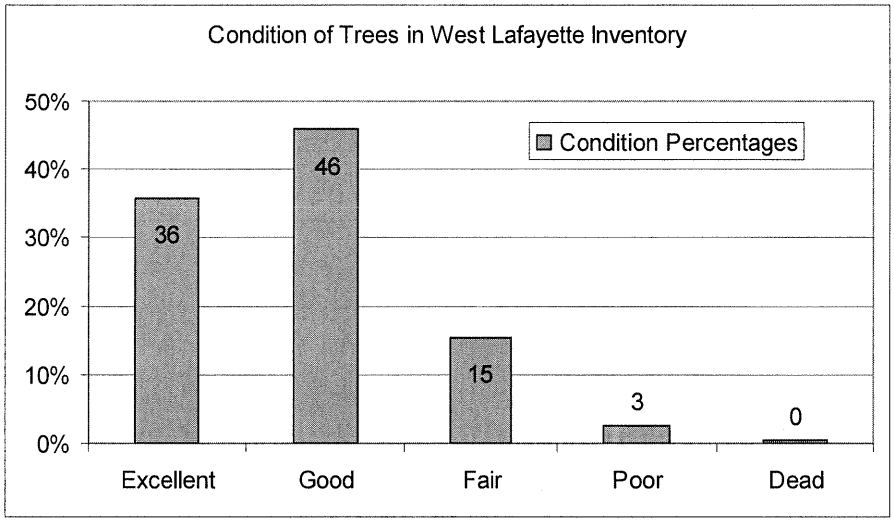


Figure 8. Numbers of excellent trees by DBH class in West Lafayette inventory, 2005.

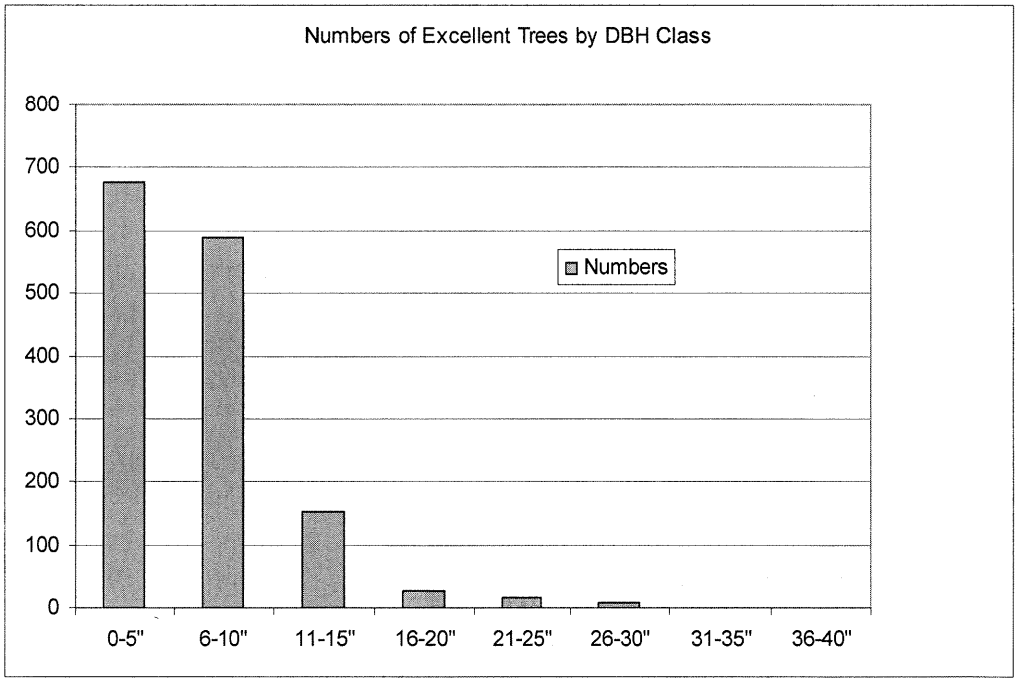


Figure 9. Numbers of good trees by DBH class in West Lafayette inventory, 2005.

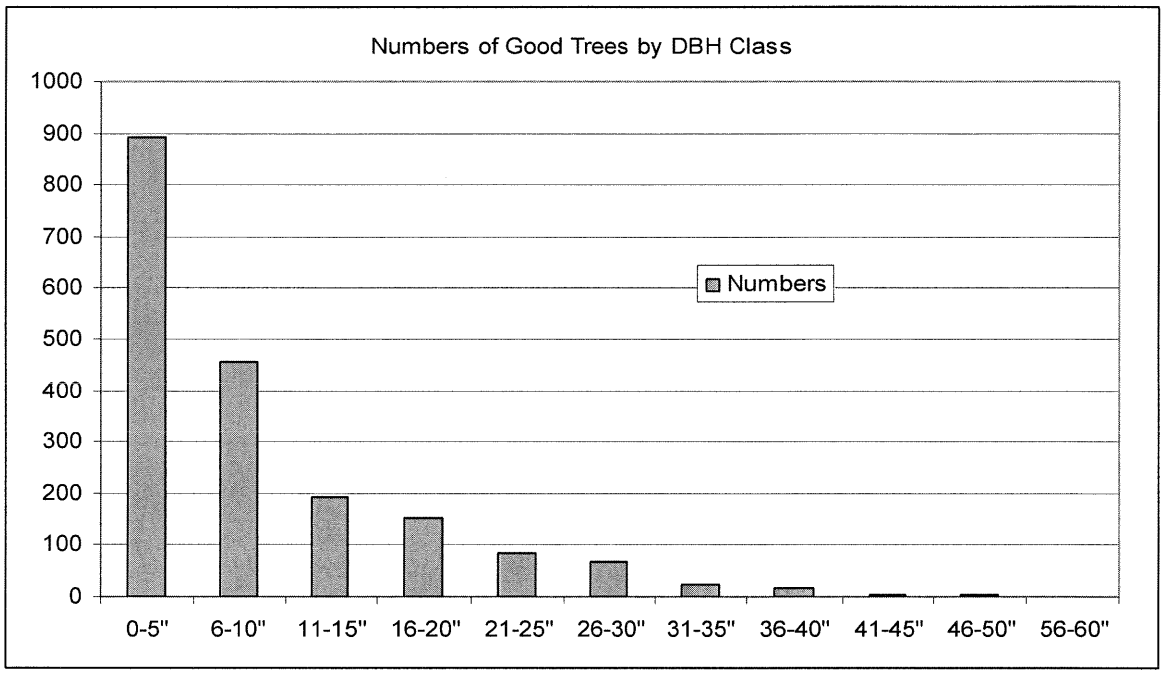


Figure 10. Numbers of fair trees by DBH class in West Lafayette inventory, 2005.

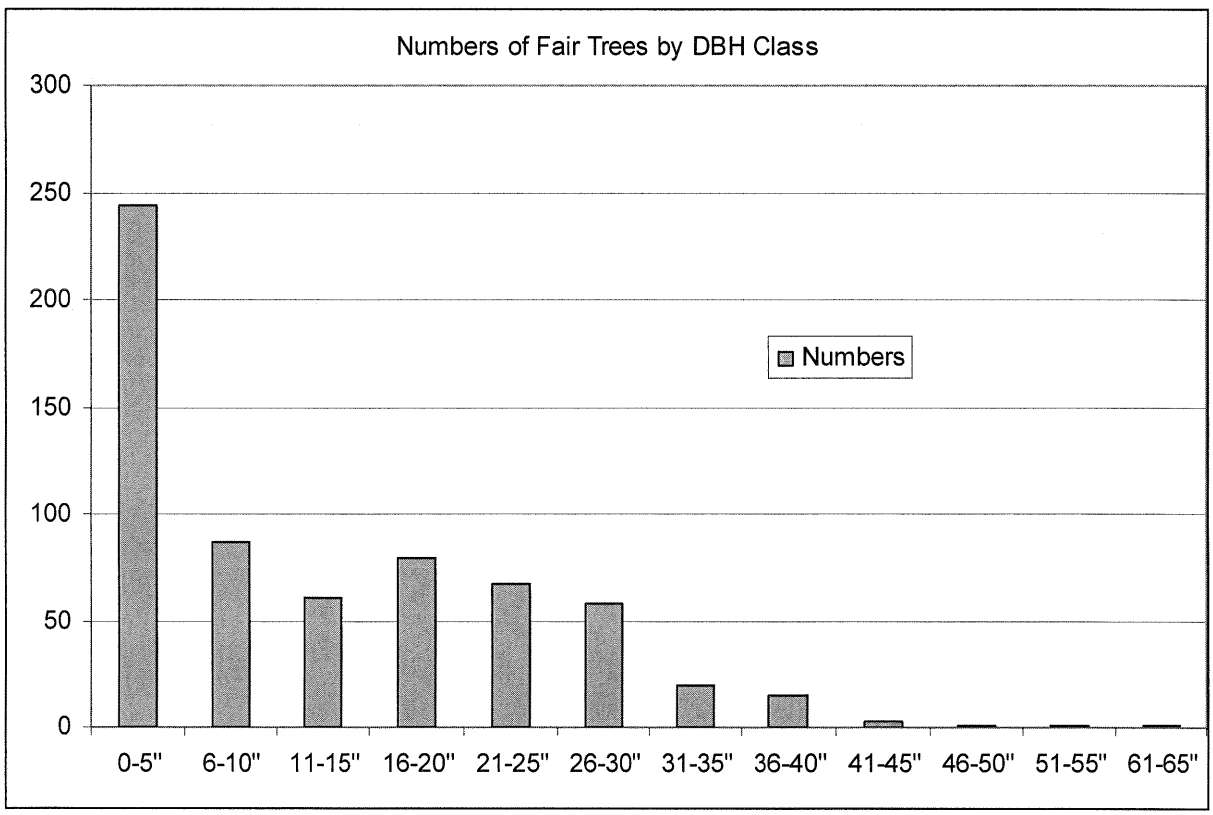
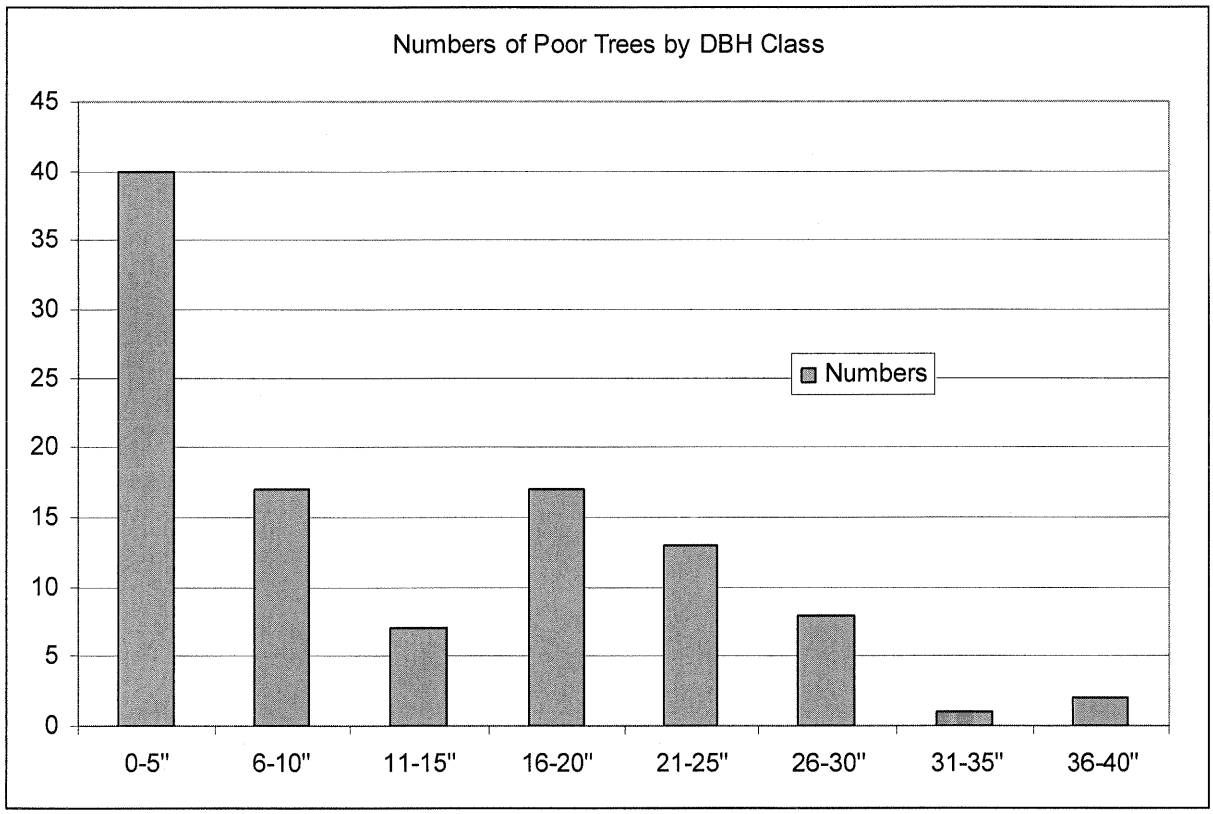


Figure 11. Numbers of poor trees by DBH class in West Lafayette inventory, 2005.



Figures 12 and 13 show the condition of the two most numerous species – ash and red maple respectively. Again the excellent and good condition trees are highest in the 0-10" DBH class for the both species.

Figure 12. Condition and numbers of ash trees by DBH class in West Lafayette inventory, 2005.

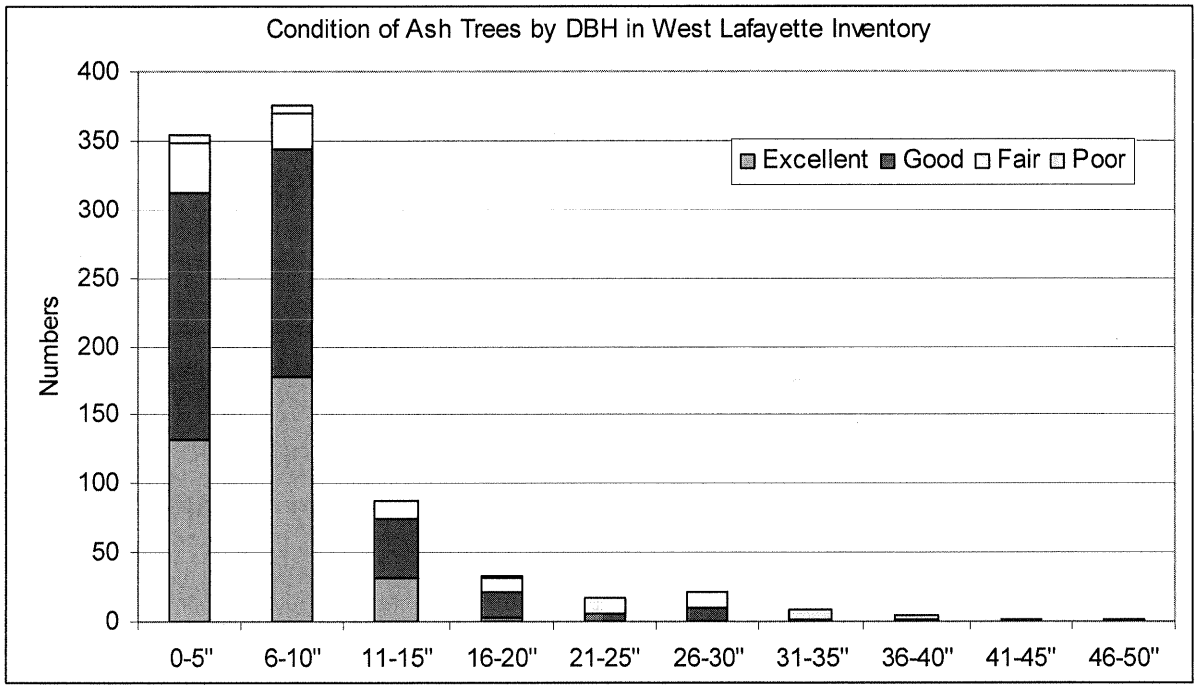
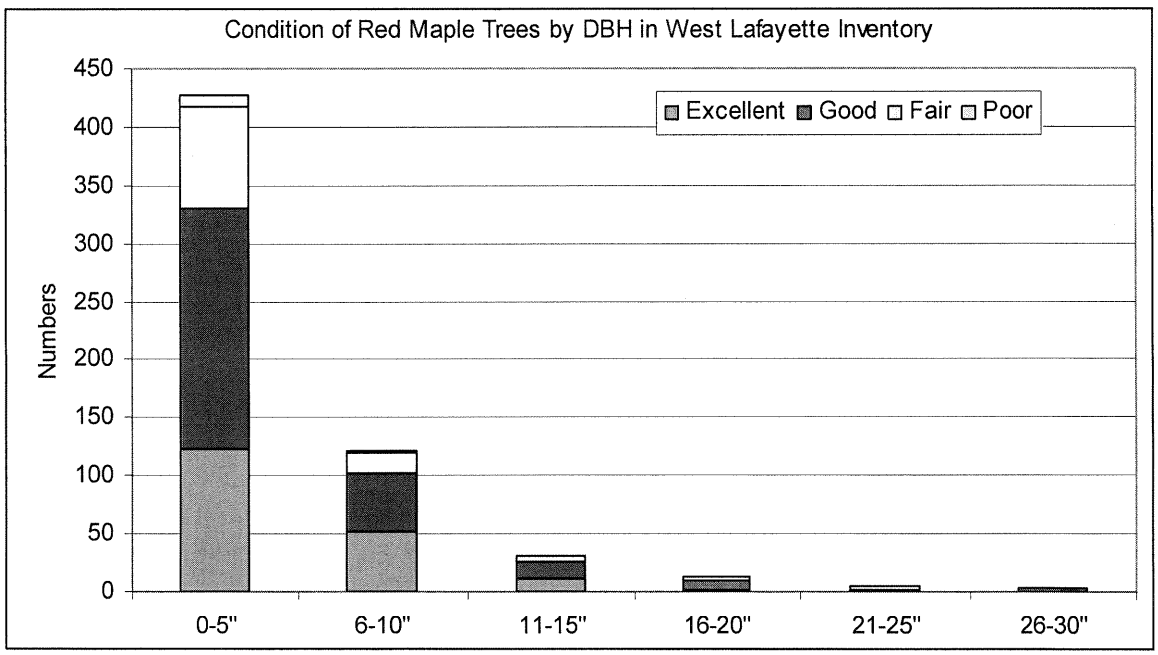


Figure 13: Condition and numbers of red maple trees by DBH class in West Lafayette inventory, 2005.



Situation Issues

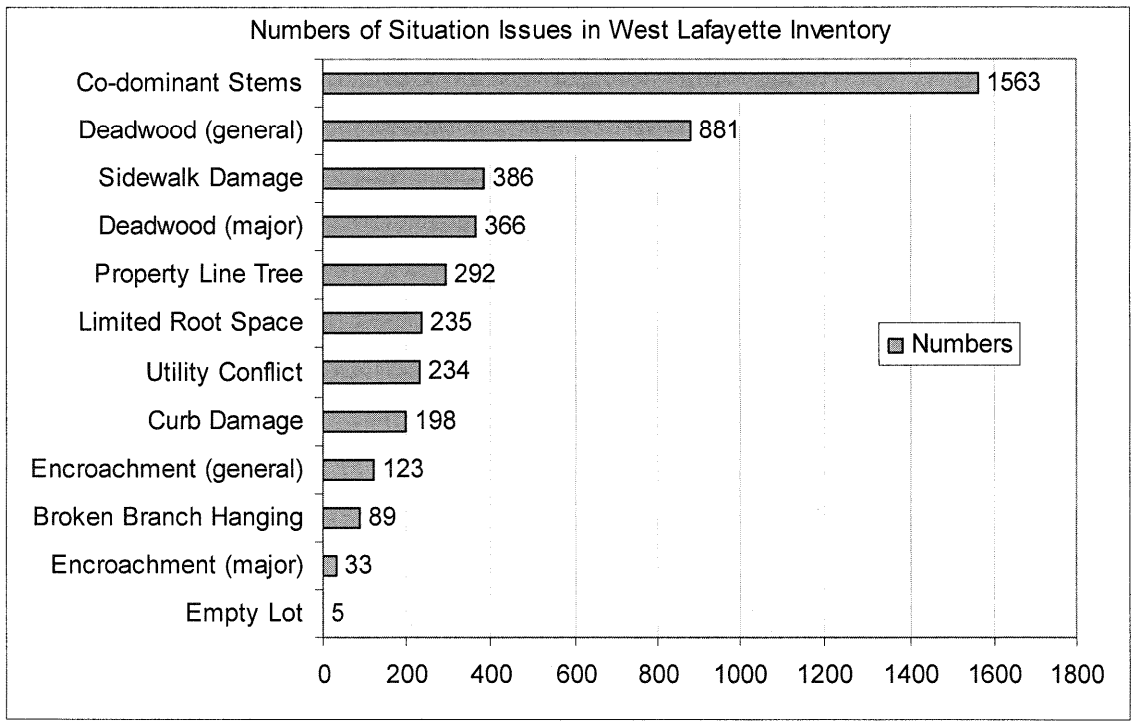
There were 4405 recorded situation issues; with 41% of the trees having no situation issues and 59% had more than one issue. The top 2 instances, co-dominant stems and deadwood (general) make of 55% of the issues (Table 9). Up to four situations could be recorded per tree. Figure 14 shows a graphical representation of the issues.

Table 9. Situation issues, number, and percentages in West Lafayette inventory, 2005.

Co-dominant Stems	1563	35%
Deadwood (general)	881	20%
Sidewalk Damage	386	9%
Deadwood (major)	366	8%
Property Line Tree	292	7%
Limited Root Space	235	5%
Utility Conflict	234	5%

Curb Damage	198	4%
Encroachment (general)	123	3%
Broken Branch Hanging	89	2%
Encroachment (major)	33	1%
Empty Lot	5	0%
TOTAL	4405	

Figure 14. Occurrence of situation issues in West Lafayette inventory, 2005.



Health Issues

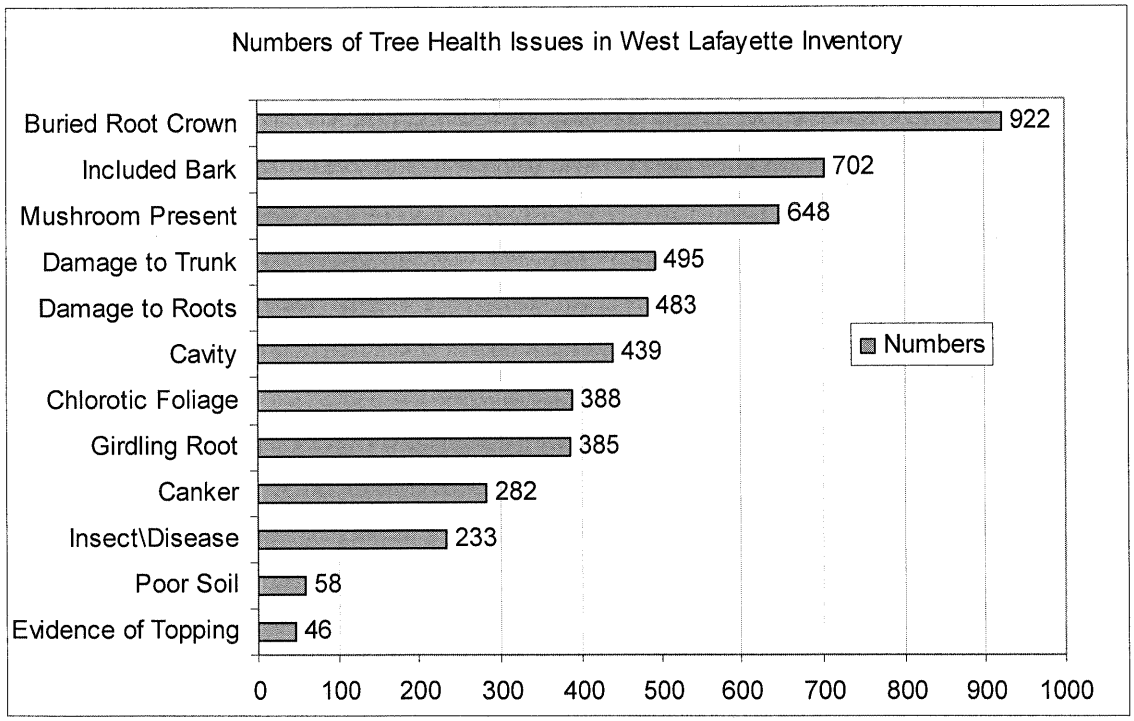
There were 5081 recorded health issues, 28% of the trees had no health issues 72% had more than one health issue. The top 5 instances, buried root crown, included bark, mushrooms, damage to trunk and roots make up 64% of the occurrences (Table 10). Up to four health issues could be recorded per tree. Figure 15 shows a graphical representation of the health issues.

Table 10. Health situation, number, and percentages of trees in West Lafayette inventory, 2005.

Buried Root Crown	922	18%
Included Bark	702	14%
Mushroom Present	648	13%
Damage to Trunk	495	10%
Damage to Roots	483	10%
Cavity	439	9%
Chlorotic Foliage	388	8%

Girdling Root	385	8%
Canker	282	6%
Insect\Disease	233	5%
Poor Soil	58	1%
Evidence of Topping	46	1%
TOTAL	5081	

Figure 15. Occurrence of health issues in West Lafayette inventory, 2005.



Utilities

Utilities were present at 460 (11%) of the trees inventoried: overhead only 278 (7%), underground only 162 (4%), and both 20 (<1%) (Figure 16). Planting spaces with utilities (Figure 17) shows overhead only 93 (<1%), underground only 36 (%1%), and both 4 (<1%).

Figure 16. Type of utility present at tree locations in West Lafayette inventory, 2005.

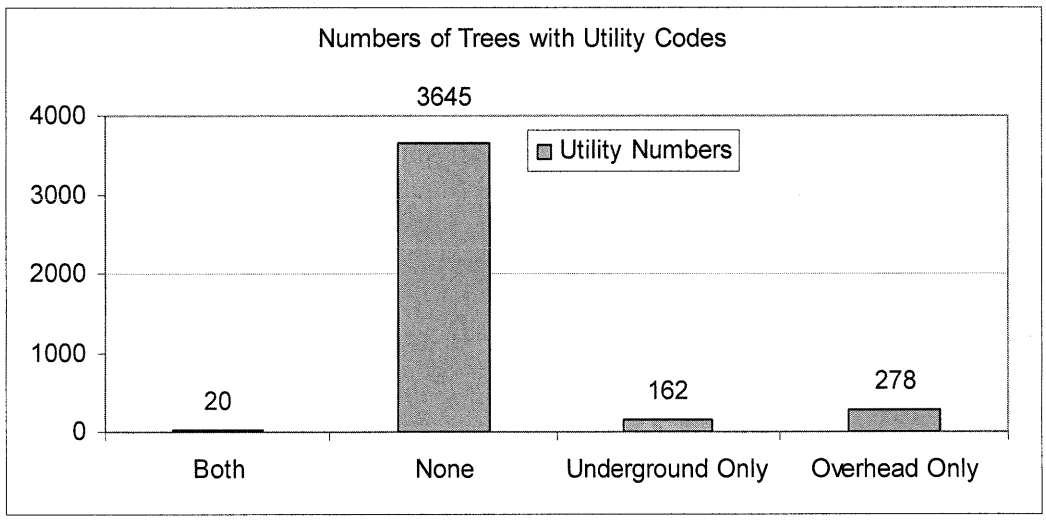
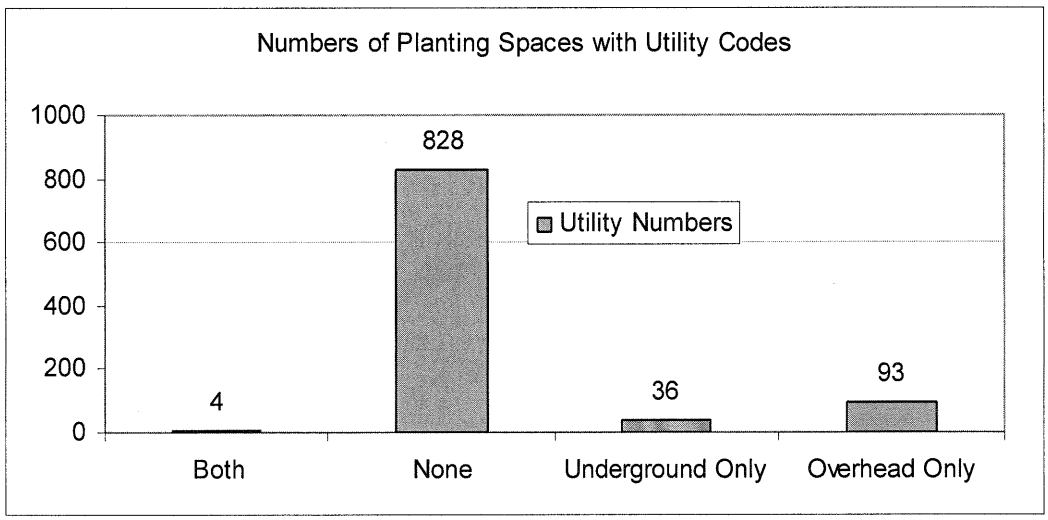


Figure 17. Type of utility present with planting spaces in West Lafayette inventory, 2005.



Planting spaces

There are 710 locations with the potential for 2226 new tree plantings. These spaces have a street lawn wider greater than 3 feet, at least 25 feet from a corner, over 15 feet from water meters, **15' from driveways**, and more than 35 feet away from another tree. Table 11 shows the streets and potential planting spaces. Location and spaces with lawn width are in Appendix II – Report N006.

Table 11. Streets and numbers of planting spaces in West Lafayette inventory, 2005.

Street	Spaces	Street	Spaces	Street	Spaces
Northwestern Avenue	94	Princess Drive	15	Allen Street	4
Hillcrest Road	78	Lincoln Street	14	Andrew Place	4
Lagrange Street	69	Ridgewood Drive	14	Chelsea Street	4
Salisbury Street	69	Woodland Avenue	14	Eden Street	4
Putnam Street	59	Anthrop Drive	13	Harrison Street	4
Henderson Avenue	53	Hayes Street	13	Knox Street	4
Lindberg Road	53	Leslie Avenue	13	Maywood Drive	4
Robinson Street	51	State Street	13	Northridge Drive	4
Rose Street	47	Carberry Drive	12	Pike Street	4
Ravinia Road	45	Cinnabar Street	12	Quincey Street	4
Waldron Street	43	Pawnee Drive	12	Seminole Drive	4
Sycamore Lane	37	Sylvia Street	12	Seneca Lane	4
Vine Street	36	Ashland Street	11	South Street	4
Forest Hill Drive	35	Carmel Circle	11	Sunset Lane	4
Morgan Street	35	Heron Road	11	1st Street	3
Crawford Street	34	Miami Trail	11	Benton Street	3
Littleton Street	34	Navajo Street E.	11	Covington Street	3
University Street	33	North Street	11	Garfield Street	3
Indian Trail Drive	32	Highland Drive	10	Hall Road	3
Meridian Street	32	Jefferson Drive	10	Hartman Court	3
Russell Drive	31	Lawn Avenue	10	Howard Avenue	3
Boone Street	30	Lutz Avenue	10	Marstellar Street	3
Camelback Boulevard	30	Wilshire Avenue	10	River Road N.	3
Elm Street	29	Crestview Place	9	Shelby Court	3
Carrolton Boulevard	28	Delaware Drive	9	Stadium Avenue	3
Sheridan Road	28	Linda Lane	9	3rd Street	2
Grant Street N.	27	Marilyn Avenue	9	Arrowhead Lane	2
Evergreen Street	25	Reba Drive	9	Barlow Street	2
Salisbury Street N.	25	6th Street	8	Bexley Road	2
Sunset Lane W.	25	Creighton Road	8	Columbia Street W.	2
Hamilton Street	24	Emilie Drive	8	Decatur Street	2
Park Ridge Drive	24	Tapawingo Drive	8	Eden Court	2
Garden Street	23	5th Street	7	Essex Street	2
Oak Street	23	Glenway Drive	7	Fowler Avenue W.	2
Chauncey Avenue N.	22	Westview Circle	7	Grant Street S.	2
Dehart Street	22	Yeager Road	7	Humboldt Street	2
Jasper Street	22	Jennings Street	6	Mohican Place	2
Sagamore Parkway	22	Kalberer Road	6	Stadium Avenue E	2
Stadium Avenue W.	22	Mohican Court	6	Steuben Court	2
Connolly Street	20	Sacramento Avenue	6	Avondale Street	1
Happy Hollow Road	20	Spencer Court	6	Black Hawk Lane	1
St. Joseph Court	20	Summit Drive	6	Elmwood Drive	1
Western Drive	20	Brown Street	5	Jeager Road	1
Carlisle Road	18	Chippewa Street	5	Jordan Lane	1
Stadium Avenue E.	18	Gibson Court	5	Oakhurst Drive	1
Windsor Drive	18	Maple Street	5	Sullivan Street	1
Kent Avenue	16	Navajo Street	5	Tecumseh Park Lane	1
Park Lane	16	Rainbow Drive	5	Wiggins Street	1
Boes Court	15	Riley Lane	5		
Dodge Street	15	Sheffield Street	5		

CONCLUSION

The relative age of the urban canopy can aid managers in determining maintenance cycles and the development of long-term management plans. Unfortunately age is difficult to determine without historical information or costly aging techniques. By examining a tree's diameter, one can estimate if a given tree is young, mature or old. The diameter class distribution shows a large number of young trees, 3015 trees (73%) that are 10 inches or less (Table 7). With proper maintenance these younger trees should provide significant canopy coverage for many years. However, the number of fair and poor condition trees in the 0-5" DBH class is concerning for if these are relatively new trees with in this condition they seem less likely to become healthy long-living trees.

Ten species of trees make up 80% of the inventory. The most frequently occurring species in the inventory was green/white ash, 902 trees (22%). The possibility of a single pest or disease, such as Dutch elm disease or emerald ash borer wiping out a single species increases if diversity in the urban forest is not maintained. When planting new trees in the future, consideration of increasing species diversity should be strongly considered.

Maintaining a healthy urban forest is important in reducing the incidence of property damage. The overall condition of the street trees in West Lafayette is favorable with 754 (82%) trees rated as excellent or good. Managers may wish to inspect the remaining trees (18%) rated as fair or poor. Other trees may warrant closer inspection including 1563 trees with co-dominant stems, 702 trees with included bark and 1336 instances of deadwood and broken branches. Trunk or root damage was recorded 20% of the time and buried root crowns 18%. All three issues could be prevented with education, specifications, and protection measures.

With most of the nearly 2226 planting spaces at 960 locations having no utility conflicts, it provides a better opportunity for healthier trees.

This inventory and associated database can be a valuable tool in managing the current and future development of the structure of your urban forest. As a snapshot in time, this inventory should provide managers with important information concerning the overall health of the urban forest as well as potential areas of concern.